

CLAIMS

What is claimed is:

1. An assembly for holding a substrate, the substrate having a first surface,
a second surface opposite the first surface, and an outer peripheral portion, said
assembly comprising:

a holding body having a support surface for supporting the substrate,
said holding body having an aperture for passing therethrough a gas having a
thermal conductivity; and

a heat transferring seal having a first surface for frictionally engaging
said second surface of said substrate, said heat transferring seal having a second
surface, opposite said first surface, for frictionally engaging said support surface of
said holding body, said heat transferring seal having an inner peripheral portion
defining an opening for receiving the gas, wherein said heat transferring seal has a
thermal conductivity closely matched with the thermal conductivity of the gas, for
providing substantially uniform heat transfer across the substrate.

2. The assembly of claim 1 further including a clamp for frictionally
engaging the first surface of the substrate.

3. The assembly of claim 1 wherein said opening defined by said inner
peripheral portion of said heat transferring seal, said support surface of said holding
body, and said second surface of said substrate define a heat transferring volume for
receiving said heat transferring gas.

1 4. The assembly of claim 3 wherein said heat transferring seal has a
2 thickness of 25 to 125 microns.

1 5. The assembly of claim 4 wherein said second surface of said heat
2 transferring seal is adhesive.

1 6. The assembly of claim 5 wherein said heat transferring seal has an
2 outer peripheral portion with a shape substantially conforming to a shape of the
3 outer peripheral portion of the substrate.

1 7. The assembly of claim 6 wherein said substrate and said holding body
2 are positioned, in said assembly, substantially concentrically.

1 8. The assembly of claim 6 wherein said outer peripheral portion of said
2 heat transferring seal has a first perimeter with a first size, said substrate outer
3 peripheral portion has a second perimeter with a second size, said first size of said
4 first perimeter being greater than said second size of said second perimeter.

1 9. The assembly of claim 8 wherein said inner peripheral portion of said
2 heat transferring seal has a third perimeter with a third perimeter size, said third
3 size of said third perimeter being smaller than said second size of said second
4 perimeter of said substrate.

1 10. The assembly of claim 9 wherein said first and second surfaces of said
2 heat transferring seal substantially conform to variations in said surfaces of said
3 holding body and of said substrate, said variations in surface being approximately 5
4 microns.

1 11. The assembly of claim 10 wherein said first surface of said heat transfer
2 seal is in substantially airtightly adhering contact with said second surface of said
3 substrate.

1 12. The assembly of claim 11 wherein said heat transferring seal has a
2 width of approximately 3 to 4 mm.

1 13. The assembly of claim 12 wherein said substrate has a thickness of
2 approximately 25 - 125 microns.

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1 14. A heat transferring seal for placing in an assembly for holding a
2 substrate, said substrate having a first surface and a second surface opposite the first
3 surface, said assembly including a holding body having a support surface for
4 supporting the substrate, the holding body having an aperture for passing
5 therethrough a gas having a thermal conductivity, the heat transferring seal
6 comprising:

7 a heat transferring seal having a first surface for frictionally engaging
8 said second surface of said substrate, said heat transferring seal having a second
9 surface, opposite said first surface, for frictionally engaging said support surface of
10 said holding body, said heat transferring seal having an inner peripheral portion
11 defining an opening for receiving the gas, wherein said heat transferring seal has a
12 thermal conductivity closely matched with the thermal conductivity of the gas, for
13 providing substantially uniform heat transfer across the substrate.

1 15. The heat transferring seal of claim 14 having a thickness of 25 to 125
2 microns.

1 16. The heat transferring seal of claim 15 wherein said second surface of
2 said heat transferring seal is adhesive.

1 17. The heat transferring seal of claim 16 wherein said heat transferring
2 seal has an outer peripheral portion with a shape substantially conforming to a
3 shape of the outer peripheral portion of the substrate.

1 18. The heat transferring seal of claim 17 wherein said first and second
2 surfaces of said heat transferring seal substantially conform to variations in said
3 surfaces of said holding body and of said substrate, said variations in surface being
4 approximately 5 microns.

1 19. The heat transferring seal of claim 18 wherein said first surface of said
2 heat transferring seal is in substantially airtightly adhering contact with said second
3 surface of said substrate.

1 20. The heat transferring seal of claim 17 having a width of approximately
2 3 to 4 mm.

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